

S Poplar River
628.16 Cooperative
M26prus Monitoring
1986 Arrangement ...
2nd qtr. data exchange,
United States
contribution

POPLAR RIVER

COOPERATIVE MONITORING

ARRANGEMENT

STATE DOCUMENTS COLLECTION

MAR 12 1990

1986

MONTANA STATE LIBRARY
1515 E. 6th AVE.
HELENA, MONTANA 59620

SECOND QUARTER DATA EXCHANGE

UNITED STATES CONTRIBUTION

PLEASE RETURN

August 1986

Montana State Library



3 0864 1006 7286 7

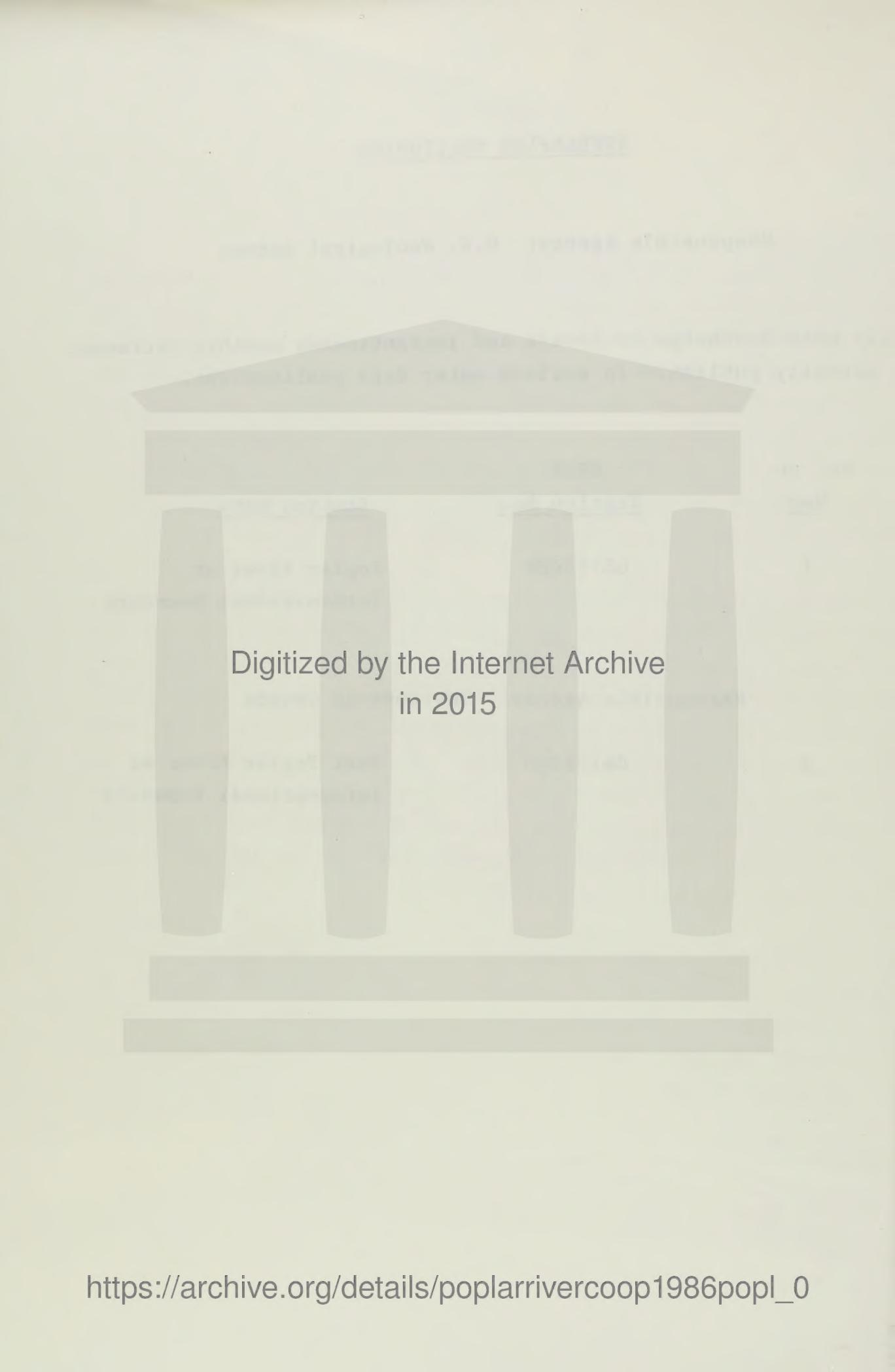
INTRODUCTION

1986 - SECOND QUARTER DATA EXCHANGE POPLAR RIVER BASIN

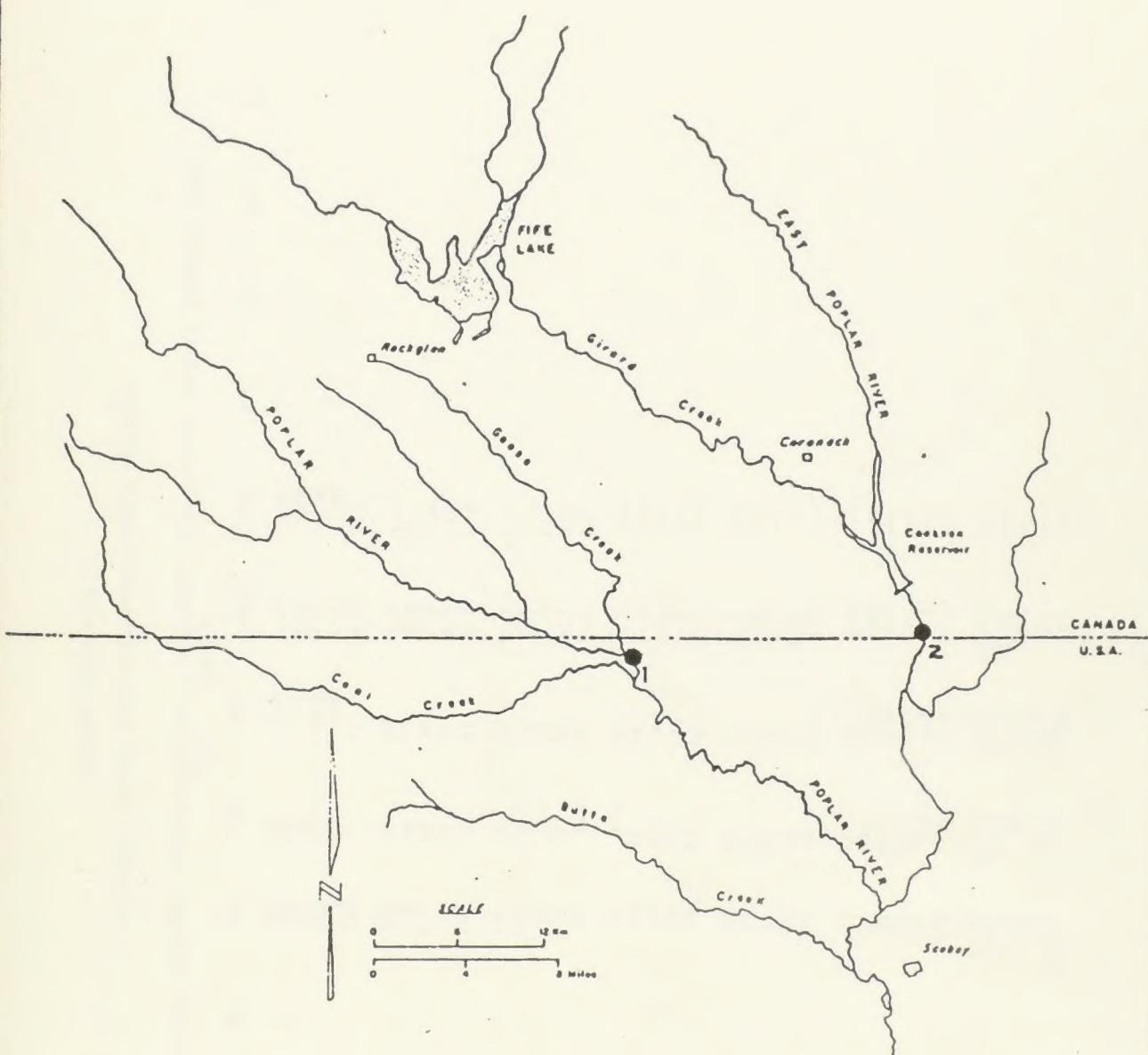
The Poplar River Bilateral Monitoring Committee was authorized by the Governments of Canada and the United States under the Poplar River Cooperative Monitoring Arrangement dated September 23, 1980. The Committee is composed of representatives of the Governments of the United States, State of Montana, Canada, and Province of Saskatchewan. In addition to the representatives of governments, two ex officio members who are local representative of the State of Montana and Province of Saskatchewan participate in activities of the Committee.

One responsibility of the Committee includes the on-going quarterly exchange of results of water quantity, water quality and air quality monitoring programs. The programs are being conducted in Canada and the United States at or near the International Boundary by cooperative monitoring agencies in accordance with the Technical Monitoring Schedules. Monitoring information is to be transmitted by each Committee co-chairman to his counterpart co-chairman within a reasonable period after the termination of each quarter. In addition, pre selected parties are to receive copies of the quarterly exchange.

This package represents information collected by United States sources for the Poplar River basin during the second quarter of 1986. Included are data for surface water quantity and quality, ground water levels. Air quality monitoring was not done during the reporting period.



Digitized by the Internet Archive
in 2015



HYDROMETRIC GAUGING STATIONS

POPLAR RIVER BASIN

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY

DISCHARGE, IN CUBIC FEET PER SECOND, CALENDAR YEAR JANUARY 1986 TO DECEMBER 1986
MEAN VALUES

| DAY | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-------|------|-------|-------|-------|-------|-------|-------|-----|-----|-----|-----|-----|
| 1 | 2.8 | 2.9 | 17.4 | 7.6 | 7.9 | 5.5 | 3.2 | | | | | |
| 2 | 2.9 | 2.9 | 23.4 | 14 | 7.0 | 4.1 | 2.9 | | | | | |
| 3 | 2.9 | 2.9 | 23.0 | 8.5 | 7.2 | 3.9 | 2.9 | | | | | |
| 4 | 2.9 | 3.0 | 23.1 | 5.8 | 7.7 | 3.7 | 3.1 | | | | | |
| 5 | 2.7 | 2.9 | 21.9 | 5.4 | 28 | 3.1 | 5.3 | | | | | |
| 6 | 2.8 | 2.9 | 20.2 | 7.0 | 18 | 2.9 | 4.9 | | | | | |
| 7 | 2.8 | 2.8 | 15.5 | 7.2 | 7.9 | 3.1 | 3.9 | | | | | |
| 8 | 2.8 | 2.6 | 7.5 | 5.5 | 7.5 | 3.1 | 3.6 | | | | | |
| 9 | 2.9 | 2.7 | 7.1 | 4.5 | 13 | 4.1 | 4.1 | | | | | |
| 10 | 2.9 | 2.6 | 7.0 | 4.3 | 11 | 4.5 | 4.5 | | | | | |
| 11 | 3.1 | 2.4 | 7.3 | 13 | 8.8 | 3.7 | 3.7 | | | | | |
| 12 | 3.0 | 2.2 | 7.0 | 5.1 | 18 | 5.7 | 5.7 | | | | | |
| 13 | 3.0 | 2.4 | 6.6 | 5.7 | 12 | 4.9 | 4.9 | | | | | |
| 14 | 3.0 | 2.2 | 6.3 | 13 | 13 | 3.7 | 3.7 | | | | | |
| 15 | 3.0 | 2.7 | 6.0 | 5.9 | 14 | 3.3 | 3.3 | | | | | |
| 16 | 3.0 | 2.6 | 5.8 | 4.6 | 22 | 2.6 | 2.6 | | | | | |
| 17 | 3.0 | 2.7 | 5.2 | 4.9 | 8.8 | 2.6 | 2.6 | | | | | |
| 18 | 3.0 | 2.6 | 5.6 | 8.3 | 8.2 | 2.7 | 2.7 | | | | | |
| 19 | 3.1 | 2.5 | 4.6 | 11 | 7.7 | 4.2 | 4.2 | | | | | |
| 20 | 3.1 | 2.5 | 3.9 | 6.5 | 7.2 | 4.0 | 4.0 | | | | | |
| 21 | 2.9 | 2.4 | 3.6 | 4.7 | 6.9 | 3.5 | 3.5 | | | | | |
| 22 | 2.9 | 2.7 | 4.3 | 4.1 | 8.3 | 3.2 | 3.2 | | | | | |
| 23 | 2.9 | 2.8 | 2.6 | 3.7 | 10 | 3.0 | 3.0 | | | | | |
| 24 | 2.9 | 2.9 | 2.4 | 4.7 | 6.8 | 2.8 | 2.8 | | | | | |
| 25 | 2.9 | 3.7 | 3.9 | 4.5 | 7.5 | 2.7 | 2.7 | | | | | |
| 26 | 2.9 | 4.6 | 17 | 4.2 | 7.0 | 2.8 | 2.8 | | | | | |
| 27 | 2.8 | 19 | 16 | 4.0 | 6.8 | 2.7 | 2.7 | | | | | |
| 28 | 2.9 | 23 | 15 | 4.0 | 6.9 | 2.6 | 2.6 | | | | | |
| 29 | 2.8 | --- | 24 | 4.7 | 6.8 | 2.8 | 2.8 | | | | | |
| 30 | 2.9 | --- | 14 | 9.6 | 6.8 | 3.1 | 3.1 | | | | | |
| 31 | 2.9 | --- | 18 | --- | 7.7 | --- | --- | | | | | |
| TOTAL | 90.4 | 160.6 | 251.6 | 203.5 | 318.2 | 104.6 | 104.6 | | | | | |
| MEAN | 2.92 | 5.74 | 81.1 | 6.78 | 10.3 | 3.49 | 3.49 | | | | | |
| MAX | 3.1 | 4 | 234 | 14 | 28 | 5.7 | 5.7 | | | | | |
| MIN | 2.7 | 2.2 | 14 | 4.0 | 6.8 | 2.6 | 2.6 | | | | | |
| AC-FT | 179 | 319 | 4990 | 404 | 631 | 207 | 207 | | | | | |

SURFACE WATER QUALITY MONITORING

Station Location

Responsible Agency: U.S. Geological Survey

| No. on Map | USGS Station No. | Station Name |
|------------|------------------|---|
| 1 | 06178000 | Poplar River at International Boundary |
| 2 | 06178500 | East Poplar River at International Boundary |
| 3 | 06179000 | East Poplar River near Scobey |

PARAMETERS

WATSTORE*

Sampling Frequency

| Code | Parameter | Analytical method | Sampling Frequency | | |
|-------|------------------------|------------------------|--------------------|----|----|
| | | | No. | 1 | 2 |
| 00410 | Alkalinity-field | Elect. Titration | M | M | M |
| 90410 | Alkalinity-lab | Elect. Titration | M | M | M |
| 01106 | Aluminum-diss | AA | SA | SA | SA |
| 00610 | Ammonia-tot | Colorimetric | M | M | M |
| 00625 | Ammonia+Org N-tot | Colorimetric | M | M | M |
| 01000 | Arsenic-diss | AA, hydride | SA | SA | SA |
| 01002 | Arsenic-tot | AA, hydride | A | A | A |
| 01010 | Beryllium-diss | AA | SA | SA | SA |
| 01012 | Beryllium-tot/rec | AA-Persulfate | A | A | A |
| 01020 | Boron-diss | Colorimetric | M | M | M |
| 01025 | Cadmium-diss | AA | SA | SA | SA |
| 01027 | Cadmium-tot/rec | AA-persulfate | A | A | A |
| 00915 | Calcium | AA | M | M | M |
| 00680 | Carbon-tot Org | Wet Oxidation | SA | SA | SA |
| 00940 | Chloride-diss | Ion chromatography | M | M | M |
| 01030 | Chromium-diss | AA | SA | SA | SA |
| 01034 | Chromium-tot/rec | AA-persulfate | A | A | A |
| 00080 | Color | Electrometric, visual | M | M | M |
| 00095 | Conductivity | Wheatstone Bridge | M | D | M |
| 01040 | Copper-diss | AA | SA | SA | SA |
| 01042 | Copper-tot/rec | AA-persulfate | A | A | A |
| 00061 | Discharge-inst | Direct measur. | M | M | M |
| 00950 | Fluoride | Electrometric | M | M | M |
| 01046 | Iron-diss | AA | M | M | M |
| 01045 | Iron-tot/rec | AA-persulfate | A | A | A |
| 01049 | Lead-diss | AA | SA | SA | SA |
| 01051 | Lead-tot/rec | AA-persulfate | A | A | A |
| 00925 | Magnesium-diss | AA | M | M | M |
| 01056 | Manganese-diss | AA | SA | SA | SA |
| 01055 | Manganese-tot/rec | AA-persulfate | A | A | A |
| 01065 | Nickel-diss | AA | SA | SA | SA |
| 01067 | Nickel tot/rec | AA-persulfate | A | A | A |
| 00615 | Nitrite-tot | Ion-chromatography | M | M | M |
| 00630 | Nitrate+Nitrite-tot | Colorimetric | M | M | M |
| 00300 | Oxygen-diss | Winkler/meter | M | M | M |
| 70507 | Phos, Ortho-tot | Colorimetric | M | M | M |
| 00400 | pH | Electrometric | M | M | M |
| 00665 | Phosphorous-tot | Colorimetric | M | M | M |
| 00935 | Potassium-diss | AA | M | M | M |
| 00931 | SAR | Calculated | M | M | M |
| 80154 | Sediment-conc. | Filtration-gravimetric | M | M | M |
| 80155 | Sediment-load | Calculated | M | M | M |
| 01145 | Selenium-diss | AA, hydride | SA | SA | SA |
| 01147 | Selenium tot/rec | AA, hydride | A | A | A |
| 00955 | Silica | Colorimetric | M | M | M |
| 00930 | Sodium | AA | M | M | M |
| 00945 | Sulfate-diss | Colorimetric | M | M | M |
| 70301 | Total Dissolved Solids | Calculated | M | M | M |
| 00010 | Temp Water | Toluene | M | M | M |
| 00020 | Temp Air | Toluene | M | M | M |
| 00076 | Turbidity | Nephelometric | M | M | M |
| 80020 | Uranium-diss | Fluorimetric | - | MC | - |
| 01090 | Zinc-diss | AA | SA | SA | SA |
| 01092 | Zinc-tot/rec | AA-persulfate | A | A | A |

*Computer storage and retrieval system - USGS

Symbols: C-continuous; D-daily; M-monthly; MC-monthly composite; A-annually at high flow; SA-semi-annually at low and high flow; AA-atomic absorption; tot-total; rec-recoverable; diss-dissolved



SURFACE WATER QUALITY MONITORING STATIONS

C5178000

- POPLAR RIVER AT INTERNATIONAL BOUNDARY

WATER QUALITY DATA

| DATE | TIME | BARO-METRIC | | PRESS-SURE | | TEMPER-ATURE | | WIND SPEED | | WEATHER | | STREAM-FLOW | | TUR-BID-ITY | | COLOR-PLAT-INA-CE | | SPE-CIFIC CON-OXYGEN | |
|----------------|-------|--------------|--------|--------------------------|--------|--------------------------|---------|--------------------|--------------------|----------------|---------|-------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------|-----------|
| | | PSI | INCHES | INCHES | INCHES | DEG F | DEG C | DEG F | DEG C | MILES PER CENT | HOUR | CODE NUMBER | INSTANT | COOE NUMBER | TANEOUS UNITS | COBALI UNITS | NUCH UNITS | CH UNITS | MG/L |
| APR 25... | 11:30 | 29.9 | 2.0 | 0.96 | 50 | 20 | 1 | 26 | 1 | 26 | 1 | 26 | 1.5 | 60 | 733 | 8.0 | | | |
| APR 26... | 13:00 | 30.0 | 2.0 | 0.92 | 100 | 57.0 | 3 | 9.9 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 1030 | 12.0 | | |
| MAY 1... | 12:30 | 11.0 | 7.0 | 692 | 90 | 25 | 5 | 36 | 4.2 | 60 | 60 | 60 | 60 | 60 | 60 | 1060 | 7.2 | | |
| JUN 1... | 12:30 | 22.0 | 25.0 | 697 | 0 | 20 | 0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 1150 | 7.7 | | |
| JUL 1... | 16:30 | 26.5 | 29.0 | 696 | 0 | 30 | 0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1220 | 12.2 | | |
| OXYGEN, SOLVED | | | | | | | | | | | | | | | | | | | |
| MAY 24... | 13:00 | PH | 7.4 | CARBON DIOXIDE | PPM | AMMONIA | AMMONIA | NITRO-GEN, ORGANIC | NITRO-GEN, ORGANIC | TOTAL | TOTAL | TOTAL | NITRO-GEN, MONIA + ORGANIC | NITRO-GEN, MONIA + ORGANIC | NITRO-GEN, MONIA + ORGANIC | CARBON, PHOS-PHORUS, TOTAL | CARBON, PHOS-PHORUS, TOTAL | HARD-NESS | HARD-NESS |
| MAY 25... | 13:00 | TEMPER-ATURE | 24 | SOLVED (STAND-ARD UNITS) | CMG/L | SOLVED (STAND-ARD UNITS) | CMG/L | CMG/L | CMG/L | AS N | AS N | AS N | ND24N03 | ND24N03 | ND24N03 | ND24N03 | ND24N03 | MG/L | MG/L |
| JUN 1... | 13:00 | SATUR-ATION | 7.7 | UNITS) | AS CO2 | AS CO2 | AS CO2 | AS N) | AS N) | (00405) | (00405) | (00405) | (00610) | (00610) | (00610) | (00610) | (00610) | AS N) | AS N) |
| JUL 15... | 16:30 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| MAY 25... | 13:00 | 6.9 | 3.5 | 6.3 | 1.3 | 0.58 | 0.02 | <0.01 | 0.6 | <0.10 | 0.05 | 0.05 | 9.5 | 240 | | | | | |
| JUN 15... | 13:00 | 13.2 | 3.4 | 3.3 | 0.45 | 0.05 | <0.01 | 0.5 | <0.10 | 0.04 | 0.04 | 0.04 | 300 | | | | | | |
| JUN 19... | 13:00 | 7.9 | 3.6 | 1.9 | 1.1 | 0.19 | <0.01 | 1.3 | <0.10 | 0.06 | 0.06 | 0.06 | 360 | | | | | | |
| JUL 15... | 16:30 | 9.0 | 3.7 | 1.7 | 0.93 | 0.07 | <0.01 | 1.0 | <0.10 | 0.04 | 0.04 | 0.04 | 220 | | | | | | |

WATER QUALITY DATA

WATER QUALITY DATA

| BARO-METRIC | | TEMPERATURE, AIR (DEG C) | | WIND SPEED (MILES PER HOUR) | | WEATHER (WHO CODE NUMBER) | | STREAM FLOW, INSTANTANEOUS (CFS) | | TUR-BI-ITY (NTU) | | COLOR (PLAT-INU-MENT) | | SPECIFIC OXYGEN, DIS-OLVED (MG/L US/CM) | |
|-------------------------------|-------------------|--------------------------|-----------------------|-----------------------------|------------|---------------------------------|-------------|----------------------------------|-------------|--------------------|-------------|-----------------------|-------------|---|-------------------|
| DATE | TIME | (MM OF HG) | (DEG C) | (MM) | (PER-CENT) | (MM) | (MM) | (MM) | (MM) | (MM) | (MM) | (MM) | (MM) | (MM) | (MM) |
| JAN 1986 | 13:30 | 0.0 | 3.5 | 699 | 0 | E0 | 0 | 3.1 | 2.0 | 7 | 1500 | 5.7 | | | |
| FEB 18... | 11:45 | 0.0 | -19.0 | 695 | 100 | E0 | 71 | 5.3 | 2.0 | 12 | 1480 | 5.7 | | | |
| MAR 26... | 15:15 | 9.0 | 12.0 | 692 | 75 | E7.0 | 1 | 22 | 5.3 | 30 | 1120 | 8.5 | | | |
| APR 16... | 10:30 | 3.0 | 2.0 | 696 | 100 | E3.0 | 3 | 4.1 | 6.0 | 15 | 1160 | 11.0 | | | |
| MAY 15... | 10:00 | 3.0 | 6.0 | 695 | 95 | E17 | 3 | 12 | 3.2 | 20 | 1210 | 9.3 | | | |
| JUN 17... | 14:30 | 21.5 | 29.0 | 701 | 0 | E17 | 0 | 2.4 | 4.2 | 25 | 1220 | 8.3 | | | |
| JUL 03... | 11:30 | 20.0 | 24.0 | 705 | 0 | E0 | 0 | 3.7 | -- | -- | 1320 | 8.9 | | | |
| 08... | 11:45 | 20.0 | 24.0 | 705 | 0 | E0 | 0 | 3.7 | -- | -- | 1320 | 8.9 | | | |
| 08... | 12:00 | 20.0 | 24.0 | 705 | 0 | E0 | 0 | 3.7 | -- | -- | 1320 | 8.9 | | | |
| OXYGEN, DIS-SOLVED (PER-CENT) | | PH | | NITRO-DIOXIDE | | NITRO-GEN, DIS-SOLVED | | NITRO-GEN, ORGANIC AMMONIA | | NITRO-GEN, NITRATE | | NITRO-GEN, NITRATE | | NITRO-GEN, NITRO-MONIA + PHOS-PHORUS, | |
| DATE | (STAND-ARD UNITS) | (PER-CENT) | LAB (STAND-ARD UNITS) | (MM) | (MM) | TOTAL SOLVED AS CO2 (MM/L AS N) | (MM/L AS N) | TOTAL (MM/L AS N) | (MM/L AS N) | TOTAL (MM/L AS N) | (MM/L AS N) | TOTAL (MM/L AS N) | (MM/L AS N) | NO2+N3 (MG/L AS P) | PHOS-GEN, PHORUS, |
| JAN 1986 | 43 | 7.6 | 7.7 | 25 | 1.3 | 0.33 | 0.77 | 0.01 | 0.19 | 1.1 | 0.20 | 0.01 | | | |
| FEB 18... | 43 | 7.6 | 7.6 | 23 | 1.2 | 0.25 | 0.75 | <0.01 | -- | 1.0 | 0.20 | 0.02 | | | |
| MAR 26... | 79 | 8.6 | 8.5 | 1.9 | 1.4 | -- | <0.01 | 0.01 | 0.19 | 1.2 | 0.20 | 0.05 | | | |
| APR 16... | 90 | 8.3 | 8.3 | 4.1 | 1.1 | 0.32 | 0.18 | <0.01 | -- | 1.0 | 0.10 | 0.04 | | | |
| MAY 15... | 87 | 8.7 | 8.4 | 1.6 | -- | 0.84 | 0.06 | 0.01 | -- | 0.9 | <0.10 | 0.03 | | | |
| JUN 17... | 103 | 8.6 | 8.3 | 2.4 | -- | 0.96 | 0.04 | <0.01 | -- | 1.0 | <0.10 | 0.03 | | | |
| JUL | | | | | | -- | -- | -- | -- | -- | -- | -- | | | |
| 08... | 106 | 3.3 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | |
| 08... | 106 | 8.3 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | |
| 08... | 106 | 8.3 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | |

WATER QUALITY DATA

| SILICA | | FLUO- | | SULFATE | | CHLO- | | POTAS- | | MAGNE- | | SODIUM | | CHLOR- | | COPPER | | IRON | |
|--------------------|---------------|---------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| CARBON, ORGANIC | HARD- NESS | CALCIUM | SODIUM, SIUM, | AD- SORP- | SULFATE | RIDE, | RIDE, | POTAS- | SODIUM, | CHLO- | CHLOR- | COPPER, | COPPER, | IRON, | IRON, | TOTAL | TOTAL | TOTAL | TOTAL |
| DATE | DATE | DIS- TOTAL (Mg/L AS C) | DIS- SOLVED (Mg/L AS CA) | DIS- SOLVED (Mg/L AS MG) | DIS- SOLVED (Mg/L AS NA) | SORPTION | RIDE, | SOLVED | SOLVED | RIDE, | CHLOR- | TOTAL | TOTAL | RECOV- | RECOV- | DIS- | DIS- | RECOV- | RECOV- |
| (00680) | (00900) | (00915) | (00925) | (00930) | (00935) | (00931) | (00932) | (00935) | (00940) | (00945) | (00950) | (00955) | (00955) | (01042) | (01042) | (01040) | (01040) | (01042) | (01042) |
| JAN 1936 | 16.... | -- | 400 | 82 | 48 | 190 | 4 | 50 | 7.2 | 6.3 | 300 | 0.3 | 16 | | | | | | |
| | FEB 13.... | -- | 420 | 96 | 50 | 200 | 4 | 50 | 7.6 | 6.1 | 290 | 0.4 | 15 | | | | | | |
| | MAR 24.... | 10 | 270 | 39 | 43 | 160 | 4 | 54 | 16 | 6.2 | 230 | 0.3 | 2.1 | | | | | | |
| | APR 15.... | -- | 290 | 64 | 44 | 170 | 4 | 55 | 12 | 6.1 | 240 | 0.3 | 3.9 | | | | | | |
| | MAY 15.... | -- | 310 | 66 | 48 | 170 | 4 | 53 | 13 | 5.8 | 250 | 0.2 | 3.1 | | | | | | |
| | JUN 17.... | -- | 280 | 61 | 44 | 180 | 5 | 57 | 10 | 5.1 | 240 | 0.3 | 5.0 | | | | | | |
| | JUL 06.... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | | | | |
| | 08.... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | | | | |
| | 03.... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | | | | |
| JAN 1936 | 14.... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | | | | |
| | FEB 18.... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | | | | |
| | MAR 24.... | 3 | 3 | <0.5 | <10 | 1200 | <1 | <1 | <10 | <10 | 2 | 6 | 510 | | | | | | |
| | APR 16.... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | | | | |
| | MAY 15.... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | | | | |
| | JUN 17.... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | | | | |
| | JUL 09.... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | | | | |
| | 08.... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | | | | |
| | 03.... | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | | | | |

WATER QUALITY DATA

| SOLIDS, | SOLIDS, | SED. | SEDIMENT, | SEDIMENT, | HARD- |
|---------------|-----------|-----------|-----------|-----------|-----------|
| SUM OF | SOLIDS, | SUSP. | PHOS- | ALKALI- | NESS |
| CONSTITUENTS, | DIS- | SIEVE, | PHORUS, | CIFIC | |
| SOLVED | SOLVED | DIAM. | ORTHO, | DIS- | NONCAR- |
| DIS- | (TONS) | % FINER | GEN. | CHARGE, | SONATE |
| | | | TOTAL | SUS- | (MGL |
| | | | (MGL) | ANCE |) AS |
| SOLVED | PER. | THAN | (MGL | PENDED | AS |
| (MGL/DAY) | (AC-FT) | 0.62 MM | AS P) | PENDED | |
| (7/30/01) | (7/30/02) | (7/30/03) | (7/30/03) | (7/30/03) | (7/30/03) |

POPLAR RIVER BASIN

06178500 EAST POPLAR RIVER AT INTERNATIONAL BOUNDARY

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C.) CALENDAR YEAR JANUARY 1986 TO DECEMBER 1986
ONCE-DAILY

| DAY | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|-------|-------|------|-------|-------|-------|-----|-----|-----|-----|-----|-----|-----|
| 1 | 1390 | 1290 | 1170 | 1150 | 1280 | | | | | | | |
| 2 | 1320 | 1230 | 1230 | 1170 | 1250 | | | | | | | |
| 3 | 1360 | 1360 | 1200 | 1240 | 1290 | | | | | | | |
| 4 | 1380 | 1370 | 1220 | 1190 | 1300 | | | | | | | |
| 5 | 1400 | 1380 | 1180 | 1200 | 1280 | | | | | | | |
| 6 | 1360 | 1400 | 1160 | 1250 | 1330 | | | | | | | |
| 7 | 1380 | 1390 | 1160 | 1330 | 1390 | | | | | | | |
| 8 | 1340 | 1450 | 1160 | 1300 | 1340 | | | | | | | |
| 9 | 1410 | 1400 | 1150 | 1250 | 1360 | | | | | | | |
| 10 | 1400 | 1500 | 1160 | 1290 | 1480 | | | | | | | |
| 11 | 1380 | 1520 | 1150 | 1320 | 1390 | | | | | | | |
| 12 | 1320 | 1480 | 1150 | 1230 | 1450 | | | | | | | |
| 13 | 1430 | 1480 | 1150 | 1180 | 1400 | | | | | | | |
| 14 | 1450 | 1480 | 1150 | 1260 | 1330 | | | | | | | |
| 15 | 1440 | 1500 | 1140 | 1220 | 1260 | | | | | | | |
| 16 | 1450 | 1470 | 1140 | 1210 | 1200 | | | | | | | |
| 17 | 1440 | 1450 | 1140 | 1230 | 1180 | | | | | | | |
| 18 | 1450 | 1460 | 1140 | 1350 | 1210 | | | | | | | |
| 19 | 1440 | 1470 | 1140 | 1440 | 1270 | | | | | | | |
| 20 | 1440 | 1490 | 1140 | 1210 | 1270 | | | | | | | |
| 21 | 1440 | 1470 | 1140 | 1230 | 1290 | | | | | | | |
| 22 | 1490 | 1470 | 1130 | 1220 | 1300 | | | | | | | |
| 23 | 1490 | 1480 | 1130 | 1290 | 1270 | | | | | | | |
| 24 | 1490 | 1460 | 1150 | 1400 | 1280 | | | | | | | |
| 25 | 1490 | 1440 | 1150 | 1250 | 1260 | | | | | | | |
| 26 | 1480 | --- | 1130 | 1240 | 1270 | | | | | | | |
| 27 | 1500 | --- | 1160 | 1290 | 1280 | | | | | | | |
| 28 | 1500 | --- | 1170 | 1360 | 1280 | | | | | | | |
| 29 | 1490 | --- | 1160 | 1440 | 1280 | | | | | | | |
| 30 | 1480 | --- | 1130 | 1400 | 1280 | | | | | | | |
| 31 | 1500 | --- | 1190 | --- | 1280 | | | | | | | |
| TOTAL | 44370 | --- | 35870 | 38140 | 40330 | | | | | | | |
| MEAN | 1430 | --- | 1160 | 1270 | 1300 | | | | | | | |
| MAX | 1500 | --- | 1230 | 1440 | 1480 | | | | | | | |
| MIN | 1320 | --- | 1130 | 1150 | 1180 | | | | | | | |

06179000

- EAST FORK POPLAR RIVER NEAR SCOBEY, MT.

WATER POLLUTION

WATER QUALITY DATA

06179000

- EAST FORK POPLAR RIVER NEAR SCOBERRY, MT.

WATER QUALITY DATA

| DATE | IRON, (UG/L AS FE) | LEAD, TOTAL DIS- SOLVED (UG/L AS PB) | MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS PB) | NICKEL, NESE, DIS- SOLVED (UG/L AS MN) | NICKEL, TOTAL DIS- SOLVED (UG/L AS NI) | ZINC, TOTAL DIS- SOLVED (UG/L AS ZN) | ZINC, TOTAL DIS- SOLVED (UG/L AS AL) | SELE- NIUM, DIS- SOLVED (UG/L AS SE) |
|----------|--------------------------|---|---|---|---|---|---|---|
| | | | | | | | | |
| JAN 1935 | 16*** | 23 | 1 | 1 | 40 | 8 | 2 | 3 |
| MAR | 25*** | 37 | -- | -- | -- | -- | -- | -- |
| APR | 16*** | 33 | -- | -- | -- | -- | -- | -- |
| MAY | 14*** | 33 | -- | -- | -- | -- | -- | -- |
| JUN | 18*** | 39 | -- | -- | -- | -- | -- | -- |
| JUL | 16*** | -- | -- | -- | -- | -- | -- | -- |
| JAN 1936 | 14*** | -- | 1200 | 4.9 | 1.6 | 51 | <0.01 | 72 |
| MAR | 25*** | <1 | 670 | 60 | 0.91 | 84 | 0.02 | 28 |
| APR | 16*** | -- | 880 | 29 | 1.2 | 93 | 0.01 | 26 |
| MAY | 14*** | -- | 880 | 48 | 1.2 | -- | 0.01 | -- |
| JUN | 18*** | -- | 800 | 7.9 | 1.1 | -- | <0.01 | -- |
| JUL | 16*** | -- | -- | -- | -- | -- | -- | -- |
| JAN 1937 | 14*** | -- | SOLIDS, SUM OF CONSTI- TUENTS, | SOLID, | SED. | PHOS- PHORUS, | SEDI- MENT, | SPE- CIFIC NESS |
| MAR | 25*** | <1 | TOTAL DIS- SOLVED (UG/L AS SE) | DIS- SOLVED (TONS PER DAY) | SIEVE DIAM. | ORTHO, | DIS- CHARGE, | ALKA- LINITY |
| APR | 16*** | -- | (UG/L AS SE) | (TONS PER DAY) | % FINE AC-FT) | TOTAL THAN AS P) | SUS- PENDED (MG/L AS P) | NONCAR- BONATE |
| MAY | 14*** | -- | (01147) | (70301) | (70302) | (70303) | (70507) | LAB (MG/L AS P) |
| JUN | 18*** | -- | -- | -- | -- | -- | -- | ANCE LA8 (US/CM) |
| JUL | 16*** | -- | -- | -- | -- | -- | -- | PENDED (MG/L AS P) |
| JAN 1938 | 14*** | -- | SOLIDS, SUM OF CONSTI- TUENTS, | SOLID, | SED. | PHOS- PHORUS, | SEDI- MENT, | SPE- CIFIC NESS |
| MAR | 25*** | <1 | TOTAL DIS- SOLVED (UG/L AS SE) | DIS- SOLVED (TONS PER DAY) | SIEVE DIAM. | ORTHO, | DIS- CHARGE, | ALKA- LINITY |
| APR | 16*** | -- | (UG/L AS SE) | (TONS PER DAY) | % FINE AC-FT) | TOTAL THAN AS P) | SUS- PENDED (MG/L AS P) | NONCAR- BONATE |
| MAY | 14*** | -- | (01147) | (70301) | (70302) | (70303) | (70507) | LAB (MG/L AS P) |
| JUN | 18*** | -- | -- | -- | -- | -- | -- | ANCE LA8 (US/CM) |
| JUL | 16*** | -- | -- | -- | -- | -- | -- | PENDED (MG/L AS P) |

GROUND WATER LEVELS TO MONITOR

POTENTIAL DRAWDOWN DUE TO

COAL SEAM DEWATERING

Responsible Agency: Montana Bureau of Mines and Geology

No. on Map

2 to 22

Sampling

Determine water levels
quarterly



GROUND WATER PIEZOMETERS TO MONITER POTENTIAL

DRAWDOWN DUE TO COAL SEAM DEWATERING

Ground-water level measurements

| Well no. | <u>Depth to water (feet)</u> | |
|-------------|------------------------------|------------------|
| | April 9, 1986 | June 20, 1986 |
| 2 | 218.29 | 217.75 |
| 3 | 82.00 | 81.85 |
| 4 | 60.73 | 60.52 |
| 5 | 20.85 | 20.83 |
| 6 | 21.34 | 20.79 |
| 7 | 79.01 | 78.58 |
| 8 | 13.69 | 14.09 |
| 9 | 14.19 | 14.62 |
| 10 | 5.74 | 5.86 |
| 11 | -1.02 | -1.05 |
| 12 | dry | dry |
| 13 | 135.04 | 134.99 |
| 14 | 212.56 | 212.54 |
| 15 | 224.51 | 224.34 |
| 16 | 41.72 | 41.05 |
| 17 | 248.43 | 247.98 |
| 18 | 247.96 | 247.79 |
| 19 | 126.49 | 126.17 |
| 20 | dry | dry |
| 21 | 240.67 | 240.63 |
| 22 | 18.14 | 17.93 |

(-) Indicates water level above land surface

